Remarks

The application has been reviewed in light of the Official Action mailed August 23, 2005. Claims 1 and 3 have been amended. Claim 2 is withdrawn. Claim 11 is new. Claims 1 and 3-11 are pending in the application.

No new matter is introduced by the amendments. The amendments correspond to matter disclosed in claims 1 and 4.

Pursuant to Examiner's restriction requirement, Applicant hereby elects the invention of Group I, Claims 1 and 3-10, drawn to a method, for prosecution in this case. Claims 2-3, drawn to an apparatus, are reserved for filing in a future application. Claim 11 is new.

The Examiner objected to the form of the abstract and the title. Applicant has amended the specification in accordance with the Examiner's suggestions. The phrase "The invention relates to" has been removed from the abstract. A new title makes reference only to a method.

The Examiner rejected claim 3 under 35 U.S.C. 112, second paragraph, for being indefinite. Applicant has amended claim 3 to be directed solely to a process.

The Examiner has rejected claims 1 and 3-10 under 35 U.S.C. 103(a) as being unpatentable over Wadley et al. (US 6,478,931) or Green et al. (4,499,152). As amended, claims 1 and 3-10 are allowable over Wadley and Green because all claims require a method that 1) deposits an oxide from a gaseous state, 2) deposits a metal layer from a metalorganic starting material that is converted into a gas phase, and 3) deposits the metal and oxide layers in the same process chamber. New claim 11 is al-

lowable over Wadley and Green because claim 11 requires a method that alters between metal and oxide deposition by changing substrate temperature.

Wadley does not anticipate claims 1 and 3-11 because it discloses a method by which a metal layer is deposited by physical vapor deposition (e.g. sputtering a target). (col. 6 line 36 and claims). Wadley does not disclose a method in which 1) a metal layer is deposited using a metalorganic in a gas phase; 2) an oxide layer is deposited from a gas phase; 3) these layers are deposited in the same process chamber; or 4) the deposition of metal and oxide layers is achieved by altering the substrate temperature. Thus, Wadley does not anticipate the claimed invention.

Green does not anticipate claims 1 and 3-11 because it discloses a method by which a copper layer is vapor deposited (col 3 line 33-35) and a zinc oxide layer is deposited by vapor decomposition in the same chamber. (Col. 3 line 35-39). The disclosed method utilizes a residual gas analyzer to monitor the oxygen and water vapor content (Col. 3 line 39-41) and a vacuum pump to control the presence of oxygen and water vapor. (Col. 3 line 28-32). Green does not disclose a method in which: 1) a metal layer is deposited using a metalorganic in a gas phase; or 2) the deposition of metal and oxide layers is achieved by altering the substrate temperature. Thus, Green does not anticipate the claimed invention.

Further, neither Wadley nor Green render the present invention obvious because there is no motivation or suggestion to modify or combine the references in accordance with the claimed invention.

There is no motivation to modify these references in accordance with claims 1 and 3-10 because neither reference suggests depositing a metal layer from a metal organic in a gas phase. Wadley simply discloses depositing a metal layer utilizing physical vapor deposition. Green generically refers to depositing copper by vapor deposition.

Neither reference would motivate one skilled in the art to seek a metal organic in order to deposit a metal layer.

Similarly, there is no motivation to modify these references in accordance with claim 11 because neither reference suggests altering between metal and oxide deposition by altering the substrate temperature. Thus, neither reference would motivate one skilled in the art to deposit a metal layer and oxide layer by altering substrate temperature.

Since neither reference discloses depositing a metal layer from a metal organic in a gas phase or altering between metal and oxide deposition by changing substrate temperature, combining these references would not render claims 1 and 3-11.

Even if Wadley were applied to Green, the combination would merely render depositing copper by physical vapor deposition and zinc oxide by vapor decomposition. Applying Green to Wadley would not alter Wadley because Wadley discloses a form of vapor deposition. The combinations would still not render a method that deposits a metal layer utilizing a metal organic or another that alternates between metal and oxide deposition by controlling the substrate temperature.

As a result, neither Wadley nor Green render the claimed invention obvious.

Accordingly, in view of the foregoing amendments and remarks, it is respectfully submitted that all of the claims currently pending in the application are now in condition for allowance. Reconsideration and notice to that effect is earnestly requested.

Respectfully submitted,

11/18/05
Date

Wesley W. Whitmyer, Jr., Registration No. 33,558
Attorney for Applicant
ST.ONGE STEWARD JOHNSTON & REENS LLC
986 Bedford Street
Stamford, CT 06905-5619
203 324-6155